

ABSTRACT OF THE DISCLOSURE

The methods and apparatuses of the invention relate to liquid crystal displays. In one exemplary embodiment, a liquid crystal display includes a liquid crystal layer which has a twist angle in a range of about 60° to about 90° and includes a polarizer positioned to polarize light from a light source to create polarized light such that an angle β exists between a vector of the polarized light and a first alignment direction of the liquid crystal layer. The angle β is in a range of about -13° to about $+13^\circ$ and a value of $\Delta n d$ is in a range of about $0.1\mu\text{m}$ to about $0.2\mu\text{m}$ where Δn is a birefringence of the liquid crystal layer and d is a thickness of the liquid crystal layer. Other features of the invention will be apparent from the accompanying drawings and description.